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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
09/758,741	01/11/2001	Vincent Leroux	1366 US	9031

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EXAMINER	
DICUS, TAMRA	
ART UNIT	**PAPER NUMBER**
1774	

DATE MAILED: 11/02/2005

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary	Application No.	Applicant(s)	
	09/758,741	LEROUX ET AL.	
	Examiner	Art Unit	
	Tamra L. Dicus	1774	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

1)☒ Responsive to communication(s) filed on *14 October 2004*.

2a)☐ This action is **FINAL**. 2b)☒ This action is non-final.

3)☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

4)☒ Claim(s) *1-6 and 19-24* is/are pending in the application.

4a) Of the above claim(s) _____ is/are withdrawn from consideration.

5)☐ Claim(s) _____ is/are allowed.

6)☒ Claim(s) *1-6 and 19-24* is/are rejected.

7)☐ Claim(s) _____ is/are objected to.

8)☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

9)☐ The specification is objected to by the Examiner.

10)☐ The drawing(s) filed on _____ is/are: a)☐ accepted or b)☐ objected to by the Examiner.

Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).

Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).

11)☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

12)☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).

a)☐ All b)☐ Some * c)☐ None of:

1.☐ Certified copies of the priority documents have been received.

2.☐ Certified copies of the priority documents have been received in Application No. _____.

3.☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

1) ☒ Notice of References Cited (PTO-892)
2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
3) ☐ Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08) Paper No(s)/Mail Date _____.
4) ☐ Interview Summary (PTO-413) Paper No(s)/Mail Date. _____ .
5) ☐ Notice of Informal Patent Application (PTO-152)
6) ☐ Other: _____.

DETAILED ACTION

Because the Applicant has argued the finality of the last Office action is as being improper, a new ground of rejection is presented below and the finality of the last Office Action is withdrawn. The Yamamura reference is removed due to Applicant's arguments.

In view of the appeal brief filed on 10-14-04, PROSECUTION IS HEREBY REOPENED. A new ground of rejection is set forth below.

To avoid abandonment of the application, appellant must exercise one of the following two options:

(1) file a reply under 37 CFR 1.111 (if this Office action is non-final) or a reply under 37 CFR 1.113 (if this Office action is final); or,

(2) request reinstatement of the appeal.

If reinstatement of the appeal is requested, such request must be accompanied by a supplemental appeal brief, but no new amendments, affidavits (37 CFR 1.130, 1.131 or 1.132) or other evidence are permitted. See 37 CFR 1.193(b)(2).

Drawings

The drawings are objected to under 37 CFR 1.83(a) because they fail to show Reference No. 5 in Figure 4 as described in the specification. Any structural detail that is essential for a proper understanding of the disclosed invention should be shown in the drawing. MPEP § 608.02(d). Corrected drawing sheets in compliance with 37 CFR 1.121(d) are required in reply to the Office action to avoid abandonment of the application. Any amended replacement drawing sheet should include all of the figures appearing on the immediate prior version of the sheet, even if only one

figure is being amended. The figure or figure number of an amended drawing should not be labeled as "amended." If a drawing figure is to be canceled, the appropriate figure must be removed from the replacement sheet, and where necessary, the remaining figures must be renumbered and appropriate changes made to the brief description of the several views of the drawings for consistency. Additional replacement sheets may be necessary to show the renumbering of the remaining figures. Each drawing sheet submitted after the filing date of an application must be labeled in the top margin as either "Replacement Sheet" or "New Sheet" pursuant to 37 CFR 1.121(d). If the changes are not accepted by the examiner, the applicant will be notified and informed of any required corrective action in the next Office action. The objection to the drawings will not be held in abeyance.

Claim Rejections - 35 USC § 112

1. The following is a quotation of the first paragraph of 35 U.S.C. 112:

> The specification shall contain a written description of the invention, and of the manner and process of making and using it, in such full, clear, concise, and exact terms as to enable any person skilled in the art to which it pertains, or with which it is most nearly connected, to make and use the same and shall set forth the best mode contemplated by the inventor of carrying out his invention.

2. Claims 1 (amended) and 24 (new) are rejected under 35 U.S.C. 112, first paragraph, as failing to comply with the written description requirement. The claim(s) contains subject matter which was not described in the specification in such a way as to reasonably convey to one skilled in the relevant art that the inventor(s), at the time the application was filed, had possession of the claimed invention.

3. Regarding claims 1 and 24, the Examiner believes there is not support for the phrase "substantially covering the entire first outer surface" and is thus considered new matter because it was not originally filed in the instant Application. The drawing (Figure 4) nor the specification disclose "substantially covering" the refractory surface (see page 5, lines 2-3, e.g. "covered in part").

4. Regarding claim 24, the Examiner believes there is not support for the phrase "inner surface defining a bore" and is thus considered new matter because it was not originally filed in the instant Application. The drawing (Figure 4) nor the specification disclose an "inner surface defining a bore" the refractory surface (see page 5, lines 2-3, e.g. "covered in part").

5. The following is a quotation of the second paragraph of 35 U.S.C. 112:

> The specification shall conclude with one or more claims particularly pointing out and distinctly claiming the subject matter which the applicant regards as his invention.

6. Claims 1, 4, and 24 are rejected under 35 U.S.C. 112, second paragraph, as being indefinite for failing to particularly point out and distinctly claim the subject matter which applicant regards as the invention.

7. The term "substantially covering" in claims 1 and 24 is a relative term which renders the claim indefinite. The term "substantially covering" is not defined by the claim, the specification does not provide a definition or a standard for ascertaining the requisite degree, and one of ordinary skill in the art would not be reasonably apprised of the scope of the invention. The term "substantially the same" is indefinite as the specification does not provide a definition to the metes and bounds of the phrase. In order to determine infringement of the present claims, one necessarily would need to determine with a reasonable degree of certainty the scope of the

phrase "substantially the same." Applicant has failed to provide any such guidance and, accordingly, this phrase renders the scope of the claims unclear.

When a term of degree is presented in a claim, first a determination is to be made as to whether the specification provides some standard for measuring that degree. If it does not, a determination is made as to whether one of ordinary skill in the art, in view of the prior art and the status of the art, would be nevertheless reasonably apprised of the scope of the invention. Even if the specification uses the same term of degree as in the claim, a rejection may be proper if the scope of the term is not understood when read in light of the specification. While, as a general proposition, broadening modifiers are standard tools in claim drafting in order to avoid reliance on the doctrine of equivalents in infringement actions, when the scope of the claim is unclear a rejection under 35 U.S.C. 112, second paragraph is proper. See In re Wiggins, 488 F. 2d 538, 541, 179 USPQ 421, 423 (CCPA 1973). Additionally, a substantial portion was held to be indefinite because the specification lacked some standard for measuring the degree intended and, therefore, properly rejected as indefinite under 35 U.S.C. 112, second paragraph. Ex parte Oetiker, 23 USPQ2d 1641 (Bd. Pat. App. & Inter. 1992).

8. The term "thin-slab" in claim 4 is a relative term which renders the claim indefinite. The term "thin-slab" is not defined by the claim, the specification does not provide a definition or a standard for ascertaining the requisite degree, and one of ordinary skill in the art would not be reasonably apprised of the scope of the invention. A definition of the term "thin-slab" is absent from the specification as there is no explanation of how it's distinguished from any other nozzle.

Claim Rejections - 35 USC § 102

The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

> A person shall be entitled to a patent unless -
>
> (b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.

9. Claims 1 (amended) -4, 6 and 24 (new) are rejected under 35 U.S.C. 102(b) as being anticipated by USPN 5,691,061 to Hanse et al.

Hanse teaches a refractory shape having a coating. The body is of a refractory material (2) having a layer (10) that covers the body partially or completely that is oxidized, also comprising a bore and slagline collar (8) or liner (10) which functions as an insulative coating (includes substantially covering), with a layer of glaze (3) which has the purpose of preventing oxidation of the refractory material during preheating and use. See col. 4, lines 25-40. A bore is defined in Figure 5 (new claim 24). The material contains carbon, a binder, and alumina at col. 4, lines 45-50. At col. 6, lines 50-60, teaches carbon-containing graphite as part of the refractory material. Figures 1 and 6 show a nozzle, thin and curved (instant claim 4).

10. Claims 1 (amended)-4, 6 and 24 (new) are rejected under 35 U.S.C. 102(b) as being anticipated by USPN 5,370,370 to Benson.

Benson discloses a carbon-bonded, oxide refractory body in the form of a nozzle having a bore for use in casting molten metal, such as aluminum-killed steel (see col. 5, line 12+), where sleeve 16 serves as an insulative coating the substantially covers the nozzle forming a second

outer surface, where the exterior second surface is coated with a glaze of a glass forming frit material (see col. 6, line 20+). See Figure. A bore is defined in the Figure (new claim 24). Benson discovered that a carbon-bonded, oxide refractory material such as carbon-bonded alumina graphite in the form of a nozzle can be used to form an anti-buildup liner which is resistant to carbon monoxide gas and resistant to the formation and buildup of alumina (see col. 5, line 12+). Benson applies a glaze to the body to protect the exterior surface of the body against oxidation during firing of the nozzle (see col. 6, line 24+). Figure 1 shows a nozzle, thin and curved (instant claim 4).

Claim Rejections - 35 USC § 103

The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

> (a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negatived by the manner in which the invention was made.

11. Claim 4 is rejected under 35 U.S.C. 103(a) as being unpatentable over USPN 5,691,061 to Hanse et al., as applied to claim 1 above, in view of Hasebe et al.

Hanse essentially claims the instant invention.

Because claim 4 lacks a definition of "thin-slab", this alternate rejection of claim 4 is applied below.

Hanse does not explicitly use the term "thin-slab" nozzle.

Hasebe teaches a thin slab flat formed nozzle for continuous casting of steel named SEN significantly control the mold processing and aims at providing a form and structure sufficiently resistant to a thermal shock or thermal stress by molten steel flow by molding, adhering or bonding plurality of members of refractory nozzles (Abstract, col. 1, lines 5-10, col. 2, lines 5-25, and col. 4, lines 20-45).

It would have been obvious to have modified the refractory article of Hanse to include a thin-slab nozzle because Hasebe teaches a thin slab flat formed nozzle for continuous casting of steel named SEN significantly control the mold processing and aims at providing a form and structure sufficiently resistant to a thermal shock or thermal stress by molten steel flow by molding, adhering or bonding plurality of members of refractory nozzles (Abstract, col. 1, lines 5-10, col. 2, lines 5-25, and col. 4, lines 20-45 of Hasebe).

12. Claim 5 is rejected under 35 U.S.C. 103(a) as being unpatentable over USPN 5,691,061 to Hanse et al., as applied to claim 1 above, in view of WO 99/65842 to Brandy.

Hanse essentially claims the instant invention.

Hanse does not provide an insulative coating composition as that recited in instant claim 5.

However, Brandy discloses an insulative coating composition especially suited for refractory materials such as sleeves at page 1, lines 1-20. The coating provided includes the composition of instant claim 5, teaching insulative microspheres in use at page 2, lines 1-10, page 3, lines 20-30, patented claims 1 and 7, providing advantages such as easy application and preventive health measures suitable for casting of molten metal.

It would have been obvious to one of ordinary skill in the art to modify the refractive article of Benson to further include a refractive insulative coating composition as instant claim 5 requires because Brandy provides the composition for the purpose of providing advantages such as easy application and preventive health measures suitable for casting of molten metal. That the metal is capable of melting is not germane since it has been held that an element that is "being able to" perform a function is not a positive limitation but only requires the ability to so perform. It does not constitute a limitation in any patentable sense. *In re Hutchinson*, 69 USPQ 138.

13. Claims 19-23 are rejected under 35 U.S.C. 103(a) as being unpatentable over USPN 5,691,061 to Hanse et al. in view of WO 99/65842 to Brandy.

Hanse teaches a refractory shape having a coating. The body is of a refractory material (2) having a layer (10) that covers the body partially or completely that is oxidized, also comprising a slagline collar (8) or liner (10) which functions as an insulative coating (includes substantially covering), with a layer of glaze (3) which has the purpose of preventing oxidation of the refractory material during preheating and use. See col. 4, lines 25-40. A bore is defined in Figure 5 (new claim 24). The material contains carbon, a binder, and alumina at col. 4, lines 45-50. At col. 6, lines 50-60, teaches carbon-containing graphite as part of the refractory material. Figures 1 and 6 show a nozzle, thin and curved.

Hanse does not provide an insulative coating composition as that recited in instant claims 19 and 22.

However, Brandy discloses an insulative coating composition especially suited for refractory materials such as sleeves at page 1, lines 1-20. The coating provided includes the

composition of instant claim 5, teaching insulative microspheres in use at page 2, lines 1-10, page 3, lines 20-30, patented claims 1 and 7, providing advantages such as easy application and preventive health measures suitable for casting of molten metal.

It would have been obvious to one of ordinary skill in the art to modify the refractive article of Hanse to further include a refractive insulative coating composition as instant claim 5 requires because Brandy provides the composition for the purpose of providing advantages such as easy application and preventive health measures suitable for casting of molten metal. That the metal is capable of melting is not germane since it has been held that an element that is "being able to" perform a function is not a positive limitation but only requires the ability to so perform. It does not constitute a limitation in any patentable sense. *In re Hutchinson*, 69 USPQ 138.

14. Claim 5 is rejected under 35 U.S.C. 103(a) as being unpatentable over USPN 5,370,370 to Benson in view of WO 99/65842 to Brandy, as applied to claim 1 above.

Benson essentially claims the instant invention. As previously stated, Benson does not provide an insulative coating composition as that recited in instant claim 5. However, Brandy discloses an insulative coating composition especially suited for refractory materials such as sleeves at page 1, lines 1-20. The coating provided includes the composition of instant claim 5, teaching insulative microspheres in use at page 2, lines 1-10, page 3, lines 20-30, patented claims 1 and 7, providing advantages such as easy application and preventive health measures suitable for casting of molten metal. It would have been obvious to one of ordinary skill in the art to modify the refractive article of Benson to further include a refractive insulative coating composition as instant claim 5 requires because Brandy provides the composition for the purpose of providing advantages such as easy application and preventive health measures suitable for

casting of molten metal. That the metal is capable of melting is not germane since it has been held that an element that is "being able to" perform a function is not a positive limitation but only requires the ability to so perform. It does not constitute a limitation in any patentable sense. *In re Hutchinson*, 69 USPQ 138.

15. Claim 4 is rejected under 35 U.S.C. 103(a) as being unpatentable over USPN 5,370,370 to Benson, as applied to claim 1 above, in view of Hasebe et al.

Benson essentially claims the instant invention.

Because claim 4 lacks a definition of "thin-slab", this alternate rejection of claim 4 is applied below.

Benson does not explicitly state a "thin-slab" nozzle.

Hasebe teaches a thin slab flat formed nozzle for continuous casting of steel named SEN significantly control the mold processing and aims at providing a form and structure sufficiently resistant to a thermal shock or thermal stress by molten steel flow by molding, adhering or bonding plurality of members of refractory nozzles (Abstract, col. 1, lines 5-10, col. 2, lines 5-25, and col. 4, lines 20-45).

It would have been obvious to have modified the refractory article of Benson to include a thin-slab nozzle because Hasebe teaches a thin slab flat formed nozzle for continuous casting of steel named SEN significantly control the mold processing and aims at providing a form and structure sufficiently resistant to a thermal shock or thermal stress by molten steel flow by molding, adhering or bonding plurality of members of refractory nozzles (Abstract, col. 1, lines 5-10, col. 2, lines 5-25, and col. 4, lines 20-45 of Hasebe).

16. Claims 19-23 (new) are rejected under 35 U.S.C. 103(a) as being unpatentable over USPN 5,370,370 to Benson in view of WO 99/65842 to Brandy.

Benson discloses a carbon-bonded, oxide refractory body in the form of a nozzle for use in casting molten metal, such as aluminum-killed steel (see col. 5, line 12+), where sleeve 16 serves as an insulative coating the substantially covers the nozzle forming a second outer surface, where the exterior second surface is coated with a glaze of a glass forming frit material (see col. 6, line 20+). See Figure. Benson discovered that a carbon-bonded, oxide refractory material such as carbon-bonded alumina graphite in the form of a nozzle can be used to form an anti-buildup liner which is resistant to carbon monoxide gas and resistant to the formation and buildup of alumina (see col. 5, line 12+). Benson applies a glaze to the body to protect the exterior surface of the body against oxidation during firing of the nozzle (see col. 6, line 24+).

Benson essentially claims the instant invention. As previously stated, Benson does not provide an insulative coating composition as that recited in instant claim 19 and 22, However, Brandy discloses an insulative coating composition especially suited for refractory materials such as sleeves at page 1, lines 1-20. The coating provided includes the composition of instant claim 5, teaching insulative microspheres in use at page 2, lines 1-10, page 3, lines 20-30, patented claims 1 and 7, providing advantages such as easy application and preventive health measures suitable for casting of molten metal. It would have been obvious to one of ordinary skill in the art to modify the refractive article of Benson to further include a refractive insulative coating composition as instant claim 5 requires because Brandy provides the composition for the purpose of providing advantages such as easy application and preventive health measures

suitable for casting of molten metal. That the metal is capable of melting is not germane since it has been held that an element that is "being able to" perform a function is not a positive limitation but only requires the ability to so perform. It does not constitute a limitation in any patentable sense. *In re Hutchinson*, 69 USPQ 138.

PRIOR ART OF INTERST

- USPN 5,673,857 to Meroni et al. teaches a nozzle for continuous casting of slabs having narrow sides between 30 and 300 mm, which is considered a thin-slab nozzle.

RESPONSE TO ARGUMENTS

17. Applicant's arguments have been considered but are moot in view of the new ground(s) of rejection. Regarding the contention that the insulative coating is not a sleeve is not convincing because limitations from the specification are not read into the claims. The applied prior art indeed teaches an insulative coating as cited above.

18. Regarding the "substantially" covered coating, the term substantially does not mean the entire surface is covered and applicant describes in the specification "at least a part" is covered.

19. Hanse and Benson are still used to teach the refractory article, insulative coating, and glaze. Brandy is still used to teach the specific insulative coating ingredients.

CONCLUSION

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Tamra L. Dicus whose telephone number is 571-272-1519. The examiner can normally be reached on Monday-Friday, 7:00-4:30 p.m., alternate Fridays.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Rena Dye can be reached on 571-272-3186. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see http://pair-direct.uspto.gov. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).

Tamra L. Dicus
Examiner
Art Unit 1774

October 26, 2005

RENA DYE
SUPERVISORY PATENT EXAMINER
A.U. 1774 10/28/05